

Operating instructions

Washer-disinfector


G 7804

To avoid the risk of accidents or damage to the machine it is **essential** to read these instructions before it is installed, commissioned and used for the first time.

en - GB, AUS

M.-Nr. 05 841 051

Contents

Description of the machine	4
Guide to the machine	5
Warning and Safety instructions	7
Caring for the environment	13
Disposal of your old appliance	13
Opening and closing the door	14
Electro-thermal door lock	14
To open the door 	14
To close the door	14
To open the door with the emergency release	15
Water softener	16
Setting the water softener	16
Filling the salt reservoir	18
Salt indicator	19
Adding neutralising or rinsing agent	20
Neutralising agent (factory setting)	20
Adding neutralising agent	20
Rinsing agent	21
Adding Rinsing agent	21
Setting the dosage	22
Adding neutralising agent (optional)	23
Adding cleaning agent	24
Maintenance of the dispensing system	25
Loading the machine	26
Loading the machine	26
Adjusting the top basket	30
Operation	31
Switching on	31
Starting a programme	31
Changing a programme	32
Selecting an additional function	32
Programme sequence display	32
Programme end	32
Switching off	33
To cancel a programme	33

Programming special functions	34
1. Rinse 2	34
2. Altering the temperature and/or the temperature holding time in the "Main wash" and "Final rinse" programme stages	35
3. Venting and setting the dosage on "DOS modules G 60 and C 60" (optional extra)	37
4. Delay start and setting the delay start time	38
5. Audible tone (Buzzer)	39
6. Re-setting all parameter changes back to the factory settings.	40
Cleaning and care	41
Cleaning the filters in the wash cabinet.	41
Cleaning the spray arms	43
Cleaning the drain pump and non-return valve	44
Cleaning the filters in the water inlet	45
Cleaning the control panel.	45
Cleaning the front of the machine	45
Correcting minor faults	46
Faults / possible causes	46
After Sales Service.	47
Installation	48
Electrical connection	50
Plumbing	52
Connection to the water inlet	52
Drainage	54
Technical data	55
Programme chart	56

Description of the machine

The G 7804 washer disinfector is a front loading machine designed specifically for processing laboratory utensils and glassware.

In general these include glass, heat tolerant plastic, stainless steel and coated metal items such as containers (e.g. beakers, narrow necked and conical flasks, Erlenmeyer flasks, bottles, test tubes, separatory funnels etc.), measuring vessels (e.g. volumetric flasks, measuring cylinders, pipettes etc.), dishes (e.g. Petri dishes, mortars, watch glasses etc.) and small components (e.g. stoppers, spatula, stirrers etc.).

The main aim of processing laboratory utensils and glassware is to remove contamination from both external and internal surfaces and to rinse off any cleaning and neutralising agents.

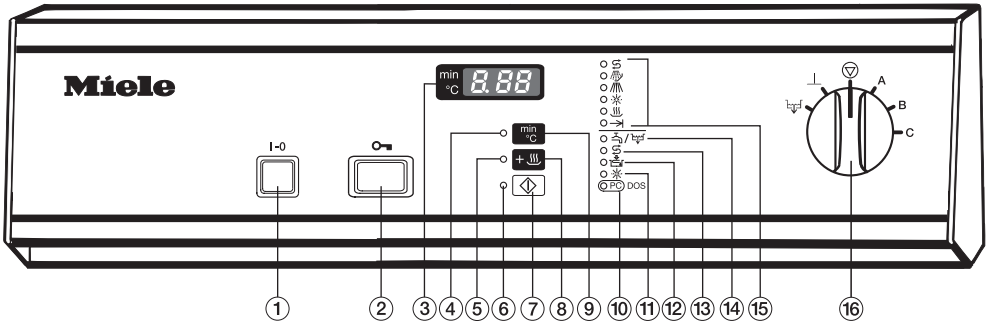
The G 7804 is designed to process one batch at a time. Items are loaded into inserts and mobile units which are then pushed into the wash cabinet. The door is then closed and the programme is started manually. At the end of the programme the operator opens the door, removes the mobile unit and inserts and unloads the items.

The G 7804 is a single cabinet system in which the whole process takes place, including the pre-wash, main wash, neutralisation, interim and final rinses. Drying can be selected as an additional function to complete the process. Each programme stage follows on automatically after the previous one.

The main wash, neutralising and rinse stages are all carried out using water based agents only. In other words using cold, hot or fully demineralised water with the addition of a suitable chemical agent (cleaning agent or neutralising agent). Other liquid agents such as organic solvents or combustible agents must not be used in this machine.

Before processing anything in this machine make sure that it is suitable for machine processing and that it is for example heat, acid and alkali tolerant.

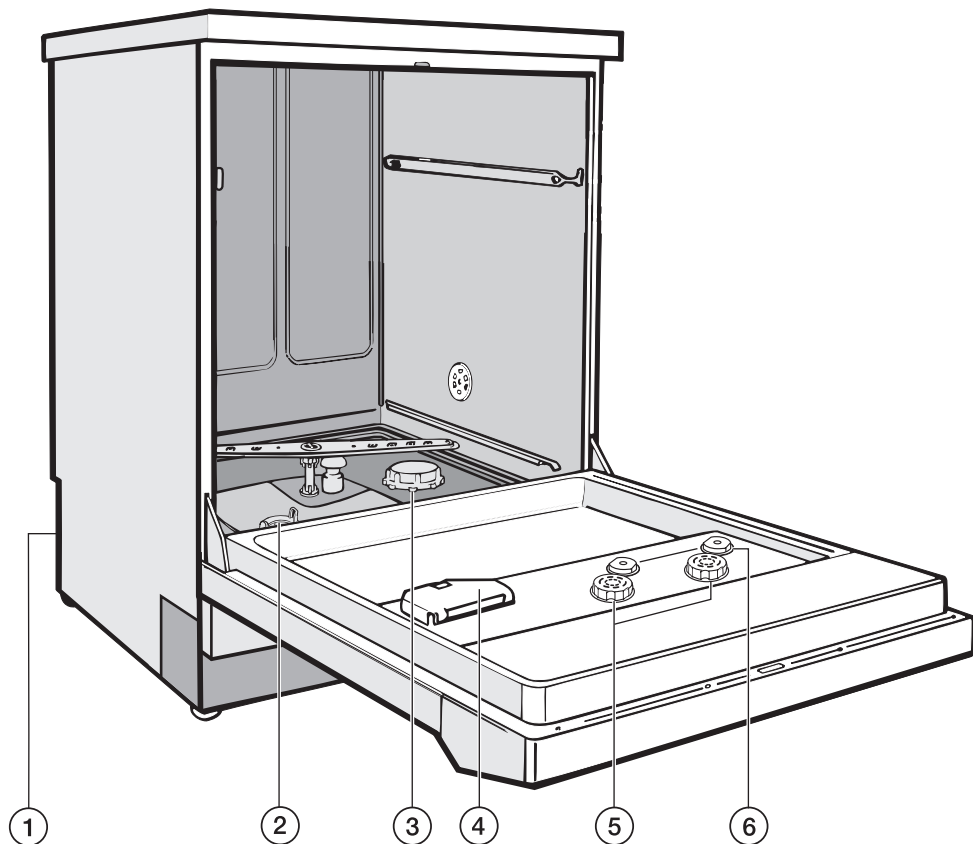
It is the user's responsibility to decide whether items contaminated with substances such as micro biological material, pathogenic cells, facultative pathogenic cells, genetically modified material etc. should be sterilised before machine processing.



- | | |
|--|--|
| ① On/Off button (I-O) | ⑩ Add (liquid) cleaning agent indicator light * |
| ② Door release | |
| ③ Display | Optical interface for service technician |
| ④ Delay start indicator light | |
| ⑤ Drying indicator light | ⑪ Add rinsing agent indicator light |
| ⑥ Programme start indicator light | ⑫ Add neutralising agent indicator light |
| ⑦ Start button | ⑬ Add salt indicator light |
| ⑧ Drying button | ⑭ Water inlet / Drain indicator light |
| ⑨ Button to toggle between the actual temperature and elapsed time | ⑮ Programme sequence display |
| | ⑯ Programme selector |

* only applies to machine fitted with optional external DOS-Module

Guide to the machine



① Connections for DOS module
Optional dispenser pump for
liquid cleaning agent and for
neutralising agent
- at the back of the machine -

② Filter combination

③ Salt container
(for the water softener)

④ Dispenser for powder cleaning agent

⑤ Duo dispenser for neutralising agent
or rinsing agent (with dosage
selector)

⑥ Level indicators

Warning and Safety instructions

This machine complies with all relevant local and national safety requirements. Incorrect use can, however, lead to personal injury and damage to property.

To avoid the risk of accidents and damage to the machine please read these instructions carefully before starting to use it.

They contain important notes on the installation, safety, operation and care of the machine.

Keep these instructions in a safe place for reference, and pass them on to any future user.

Correct application

► This machine is designed for use, as described in these operating instructions only. Alterations to the machine, or using it for purposes other than those for which it is designed, are unauthorised and could be dangerous. The manufacturer cannot be held liable for damage caused by improper or incorrect use of the machine.

► This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning its use by a person responsible for their safety.

► Personnel operating the machine should be trained regularly. Untrained personnel should not be allowed access to the machine or its controls.

► The special inserts should only be used for their specific application.

Technical safety

► Before setting up the machine, check it for any externally visible damage. Under no circumstances should you use it if it has been damaged. A damaged machine is dangerous.

► The electrical safety of this machine can only be guaranteed if connected to a correctly installed earthing system on site. It is most important that this basic safety requirement is present and regularly tested, and where there is any doubt the on-site wiring system should be inspected by a qualified electrician. The manufacturer cannot be held liable for damage or injury caused by the lack of or inadequacy of an effective earthing system (e.g. electric shock).

Warning and Safety instructions

► Please follow the advice on installation in these instructions and the separate Installation drawing.

► Before connecting the machine to the mains supply, make sure the rating on the data plate corresponds to the voltage and frequency of the on-site supply. Consult a qualified electrician if in any doubt.

► A damaged machine is dangerous. Switch off at the mains immediately and call the Miele Service Department or an authorised Miele Service Dealer.

► Installation, maintenance and repairs should only be carried out by a suitably qualified and competent person in accordance with local and national safety regulations. Repairs and other work by unqualified persons could be dangerous and the manufacturer will not be held liable.

Ensure current is not supplied to the machine until after installation, maintenance or repair work has been carried out.

► If the connection cable is damaged, it must be replaced by a Miele approved service technician.

► This machine should be commissioned and then maintained by a Miele authorised and trained service technician or other suitably qualified and competent approved person. Repairs and other work by unqualified persons could be dangerous.

► The machine must be disconnected from the mains electricity supply before any maintenance or repair work is carried out. Do not reconnect it until the maintenance or repair work has been successfully completed.

► For safety reasons, this machine may only be used when it has been fully installed.

► Never open the casing. Tampering with electrical connections or components and mechanical parts is highly dangerous to the user and can cause operational faults.

► Faulty components must only be replaced by genuine Miele original parts. The manufacturer can only guarantee the safety of the appliance when Miele replacement parts are used.

► Do not connect the machine to the mains electricity supply by a multi-socket unit or an extension lead. These do not guarantee the required safety of the machine (e.g. danger of overheating).

Warning and Safety instructions

► During installation, maintenance and repair work, the machine must be disconnected from the mains electricity supply. It is only completely isolated from the electricity supply when:

- the mains fuse is disconnected,
- the screw-out fuse is removed (in countries where this is applicable),
- it is switched off at the wall socket and the plug is withdrawn from the socket, or it is switched off at the isolator.

Correct usage

► Take great care when handling liquid agents and additives. These may contain irritant or corrosive ingredients. Do not use organic solvents as these could cause an explosion. Follow all relevant safety procedures carefully. Wear protective gloves and goggles. With all chemical agents, the manufacturer's safety instructions must be observed.

► The water in the machine must not be used as drinking water.

► Only use detergents formulated for commercial dishwashers. Do not use washing-up liquid. Using unsuitable cleaning agents could adversely affect the components of the machine, as well as items being cleaned.

► Avoid inhalation of powder cleaning agents. They can cause burning in the mouth and throat if swallowed, and can inhibit breathing.

► Only use low-foaming cleaning agents. Incorrect cleaning agents, as well as some types of soiling can cause a build-up of foam in the machine. Foam can have an adverse effect on the cleaning process.

► Please be aware that changes in formulation, storage conditions etc, which may not be publicised by the chemical producer, can have a negative effect on the cleaning result.

► Where a chemical additive is recommended on technical application grounds (e.g. a cleaning agent), this does not imply that the manufacturer of the machine accepts liability for the effect of the chemical on the items being cleaned. Please be aware that changes in formulation, storage conditions etc, which may not be publicised by the chemical manufacturer, can have a negative effect on the cleaning result.

Warning and Safety instructions

- ▶ When using cleaning agents and specialised products, it is essential that the manufacturer's instructions are followed. Only use such chemicals for the purpose and in the situation specified, to the exclusion of other chemicals, to avoid such dangers as chemical reactions and material damage.
- ▶ In critical applications where very stringent requirements have to be met, it is strongly recommended that all the relevant factors for the process, such as cleaning agent, water quality etc. are discussed with the Miele Application Technology specialists.
- ▶ If cleaning and rinsing results are subject to particularly stringent requirements (e.g. chemical analysis, specialised industrial processes etc.), a regular quality control test must be carried out by the user to ensure that the required standards of cleanliness are being achieved.
- ▶ The machine is designed for operation with water and additive cleaning agents only. Organic solvents must not be used in this machine, as there is the danger under certain circumstances of explosion. (Although this is not the case with all organic solvents, other problems could arise with their use, for example damage to rubber and synthetic materials).
- ▶ Do not allow any remains of acids or solvents, and in particular hydrochloric acid or chloride solutions, to get into the wash cabinet. Similarly avoid any materials with a corrosive effect. The presence in compounds of any solvents should be minimal (especially those in hazard class A1).
- ▶ Never clean the machine or near vicinity with a water hose or a high pressure hose.
- ▶ To avoid any corrosion damage, ensure that solutions or steam containing hydrochloric acid do not come into contact with the steel outer casing of the machine.
- ▶ To prevent the risk of damage to plumbing connections air must be bled out of the supply pipes to this dishwasher after any plumbing work.
- ▶ While the machine is under guarantee, repairs should only be undertaken by a service technician authorised by the manufacturer. Otherwise the guarantee will be invalidated.

Warning and Safety instructions

► Do not sit or lean on the opened door. This could cause the machine to tip up and be damaged or cause an injury.

► Be careful when sorting items with sharp pointed ends and positioning them in the machine that you do not hurt yourself or create a danger for others. Sharp knives, forks etc. should be placed in baskets with the pointed ends facing downwards.

► When using this machine in the higher temperature ranges be especially careful not to scald or burn yourself when opening the door. Baskets and inserts must be allowed to cool down before they are unloaded. Any water remaining in containers could still be very hot. Empty them into the wash cabinet before taking them out.

► Do not touch the heating elements or the heated surfaces on the wash cabinet floor during or directly after the end of a programme. You could burn yourself. They remain hot for some time after the end of the programme.

► Empty any containers or utensils before arranging them in the machine.

Installation

► This machine may only be used in mobile installations such as ships, caravans, aircraft etc. if a risk assessment of the installation has been carried out by a suitably qualified engineer.

► Do not install the machine in an area where there is any danger of explosion or of freezing conditions.

Safety with children

► This machine is not a toy! Keep children away from it at all times and supervise them whilst you are using it.

► Older children should only be allowed to use it unsupervised if its operation has been clearly explained to them and they are able to use it safely, recognising the dangers of misuse.

► This machine is not a toy. Do not allow children to play in or around it or to operate it. There is a danger that they could injure themselves or get into the machine and lock themselves in.

Warning and Safety instructions

Accessories

- ▶ Only use genuine Miele spare parts and accessories with this machine. The use of non-Miele parts and accessories will invalidate the guarantee.
- ▶ Any Miele accessories must be suitable for the purpose they are being used for. Consult Miele for advice.

Disposal of your old machine

- ▶ For environmental and safety reasons ensure the machine is completely drained of any residual water and cleaning agent. (Observe safety regulations and wear safety goggles and gloves). Make the door lock inoperable, so that children cannot accidentally shut themselves in. Then make appropriate arrangements for the safe disposal of the machine.
For tank system machines ensure that any water is emptied out of the tank.

The manufacturer cannot be held liable for damage caused by non-compliance with these Warning and Safety instructions.

Disposal of the packing material

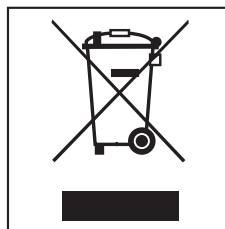
The transport and protective packing has been selected from materials which are environmentally friendly for disposal and can normally be recycled.

Ensure that any plastic wrappings, bags etc. are disposed of safely and kept out of the reach of babies and young children. Danger of suffocation.

Rather than just throwing these materials away, please ensure that they are recycled.

Disposal of your old machine

Electrical and electronic machines often contain materials which, if handled or disposed of incorrectly, could be potentially hazardous to human health and to the environment. They are, however, essential for the correct functioning of your machine. Please do not therefore dispose of it with your household waste.



Please dispose of it at your local community waste collection / recycling centre and ensure that it presents no danger to children while being stored for disposal.

It should be unplugged or disconnected from the mains electricity supply by a competent person.

Opening and closing the door

Electro-thermal door lock


The machine is equipped with an electro-thermal door lock.

The door can only be opened when:

- the electricity supply to the machine is switched on and;
- the On/Off button **I-O** is pressed in.



To open the door

- Press the door button in as far as it will go, and at the same time, grip the handle and open the door.

 Do not touch the heating elements if you open the door during or directly after the end of a programme, you could burn yourself. The elements remain hot for some time after the end of the programme.

To close the door


- Lift the door upwards and push until it clicks shut. Do not press the release catch whilst shutting the door!

After the first intake of water, it is no longer possible to open the door, except in the  (PRE-RINSE) and  (DRAIN) programmes. The machine can be opened during drying if this option has been selected.

The door remains locked until the end of the programme. It can then be opened.

To cancel a programme

If a programme has to be cancelled in an emergency, e.g. when articles in the machine jostle against each other or the programme has been interrupted because of a fault, the door will have to be opened manually:

- Turn the programme selector to the  position (the programme is cancelled after approx. 2 secs.).

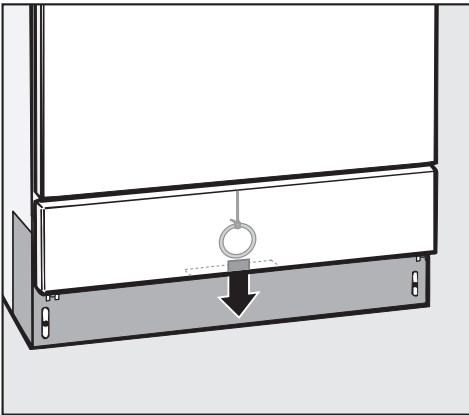
Important!

See "To cancel a programme" in the "Operation" section of this booklet for details of how to continue from here.

To open the door with the emergency release

The emergency release should only be used when the door cannot be opened normally, e.g. in the event of a power failure.

- Turn the programme selector to ∇ .
- Press the On/Off button **I-O** to switch the machine off.



- The emergency release cable is located at the bottom of the machine behind the service panel. Pull it downwards to open the door.

Water softener

The water needs to be softened to avoid calcium deposits building up on instruments and utensils and in the machine itself.

To ensure a steady supply of soft water the water softener unit must always be:

1. correctly set (programmed) and
2. the salt reservoir must be filled.
(If the water hardness level is below 0.7 mmol/l (4 °d - German scale) the reservoir does not need to be filled with reactivation salt.)

The machine is set at the factory for a water hardness level of 3.4 mmol/l (19 °d).

If the water supply is harder or softer than this (including below 0.7 mmol/l or 4 °d) the factory setting will need to be changed following the instructions in "Setting the water softener". See chart on the next page for settings.










Your local water authority will advise you on the water hardness in your area.

For fluctuating levels (e.g. 1.4 - 3.1 mmol/l or 8 - 17 °d) set the water softener to the highest setting (in this example to 3.1 mmol/l or 17 °d).

Important

The built-in water softener has settings from 0.2 - 10.8 mmol/l or 1 °d - 60 °d.

Setting the water softener

- Switch off the machine.
- Turn the programme selector to the STOP position .
- Press  and  at the same time, hold them in and, whilst doing so, switch the machine on with the **I-O** button.
The current programme status "P..." will show in the display.
The indicator light  /  will come on.
- Press  once, E01 for programming level 1 will appear in the display.
- Turn the programme selector one switch position clockwise (1 o'clock position).
The number 19 appears in the display (the factory water hardness setting in °d), (equivalent to 3.4 mmol/l).
- Press  as many times as is necessary, or hold it in until the required value (hardness level in °d) appears in the display.
Once the number 60 has been reached, the counter will begin again at 0.
- Press the  button. SP appears.
- Press  again. The setting will now be stored in memory. The display will go out.
- The machine is now ready for use.

Settings

°d (German scale)	mmol/l	°f	Setting
1	0.2	2	1
2	0.4	4	2
3	0.5	5	3
4	0.7	7	4
5	0.9	9	5
6	1.1	11	6
7	1.3	13	7
8	1.4	14	8
9	1.6	16	9
10	1.8	18	10
11	2.0	20	11
12	2.2	22	12
13	2.3	23	13
14	2.5	25	14
15	2.7	27	15
16	2.9	29	16
17	3.1	31	17
18	3.2	32	18
19 *)	3.4	34	19
20	3.6	36	20
21	3.8	38	21
22	4.0	40	22
23	4.1	41	23
24	4.3	43	24
25	4.5	45	25
26	4.7	47	26
27	4.9	49	27
28	5.0	50	28
29	5.2	52	29
30	5.4	54	30
31	5.6	56	31
32	5.8	58	32
33	5.9	59	33
34	6.1	61	34
35	6.3	63	35
36	6.5	65	36
37	6.7	67	37
38	6.8	68	38
39	7.0	70	39
40	7.2	72	40
41	7.4	74	41
42	7.6	76	42
43	7.7	77	43
44	7.9	79	44
45	8.1	81	45

°d (German scale)	mmol/l	°f	Setting
46	8.3	83	46
47	8.5	85	47
48	8.6	86	48
49	8.8	88	49
50	9.0	90	50
51	9.2	92	51
52	9.4	94	52
53	9.5	95	53
54	9.7	97	54
55	9.9	99	55
56	10.1	101	56
57	10.3	103	57
58	10.4	104	58
59	10.6	106	59
60	10.8	108	60

*) factory setting

For future servicing it is useful to make a note of your water hardness level.

Enter your water hardness level here:

_____ °d (German scale) or
_____ mmol/l


Machines **without** a water softener are set to "0" at the factory. This setting of "0" **must not** be changed on these machines.

Water softener

Filling the salt reservoir

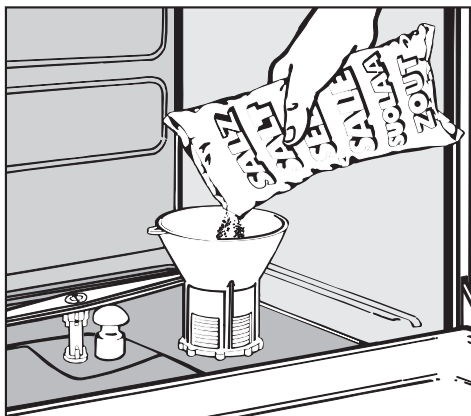
Please only use special coarse grained **reactivation salt** with granules of approx. 1-4 mm. Do not use other types of salt, e.g. table salt, agricultural or gritting salt. These could contain components which are insoluble in water which could result in damage to the water softener. If in doubt consult your Miele Professional Department.


The salt reservoir holds approx. 2.5 kg of salt.


 Inadvertently filling the salt reservoir with cleaning agent will damage the water softener. Before filling the salt reservoir make sure that you have picked up the right packet of reactivation salt.

- Remove the bottom basket from the machine.
- Unscrew the salt reservoir cap.

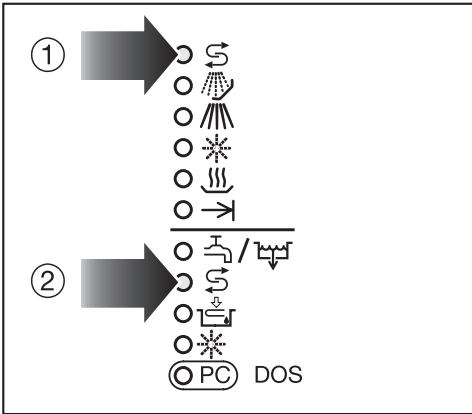
Before filling the salt reservoir with reactivation salt for the first time, fill it with approx. 2.5 litres of water.





- Place the funnel provided in place.
- Fill carefully with salt. As it is filled, displaced water will run out).
- Wipe any residual salt off the screw threads on the socket.
- Screw the cap on firmly.
- **Immediately after this:** Run the PRE-RINSE programme  to remove any traces of salt from the cabinet.

If after starting the PRE-RINSE programme  the machine does not start for a few minutes this is not a fault. The water softener is being reactivated.

Salt indicator



When the salt reservoir is empty the  indicator light ② comes on to remind you to fill the reservoir.


Reactivation takes place automatically during a programme.
The programme sequence indicator light  ① lights up whilst this is happening.

Adding neutralising or rinsing agent

The duo dispenser incorporated in the door has a capacity of approximately 2 x 180 ml. for liquid agents.

Important:

Both reservoirs must always be filled with the same liquid agent.

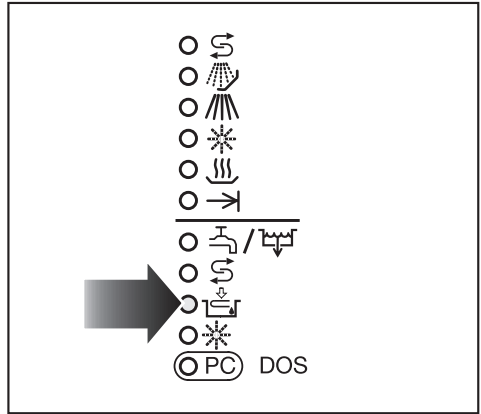
 Inadvertently filling the reservoir with powder or liquid detergent always causes serious damage to the reservoir.


Neutralising agent (factory setting)

Neutralising agent (pH-level: acidic) neutralises residues of alkaline cleaning agents on the surface of instruments and utensils.

It is automatically dispensed in the "Rinse" following the main wash.

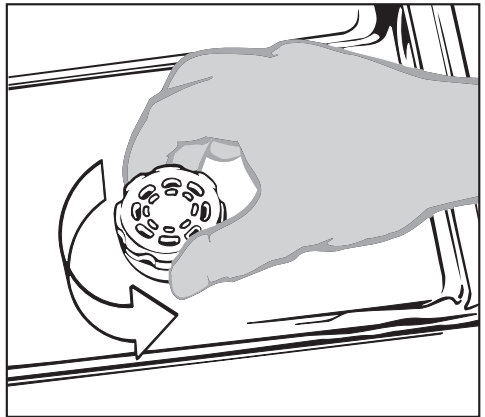
Adding neutralising agent



The reservoir must be filled with **neutralising agent** when the  indicator light comes on.

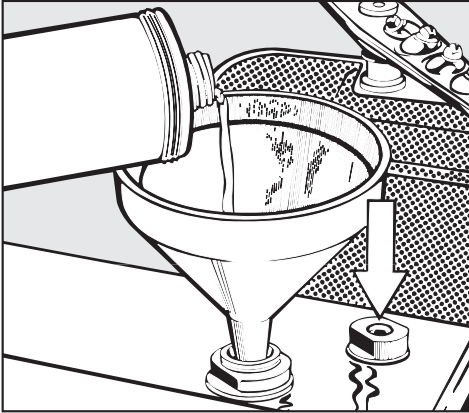
There is also a level indicator for the neutralising agent reservoir on the inside of the door (see illustration below).


- Open the door **fully**.



- Undo the screw caps.

Adding neutralising or rinsing agent

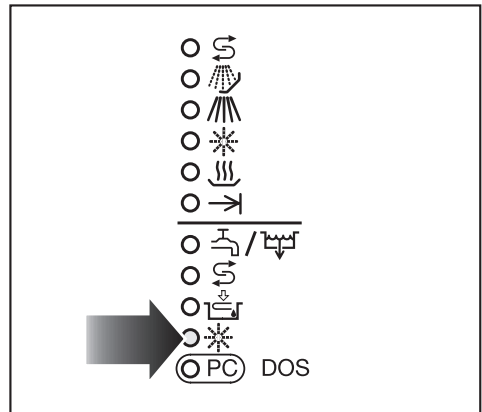



- Add neutralising agent until the level indicator is dark (see arrow on illustration). Use a funnel if necessary.
- Screw the caps back on and mop up any spilled neutralising agent. This prevents over-foaming occurring during the next programme.
- Wait until the indicator light  on the control panel lights up again before adding any more neutralising agent.

Rinsing agent

This dispenser can also be used to dispense a suitable liquid rinsing agent (or a citric acid based agent for plastic utensils) in the final rinse. Rinsing agent is necessary to ensure water does not cling and leave marks on items during the drying phase and to help items dry faster after they have been washed. Rinsing agent is poured into the storage reservoir and the amount set is dispensed automatically. **(This function has to be programmed into the machine by a Miele service technician).**

Adding Rinsing agent

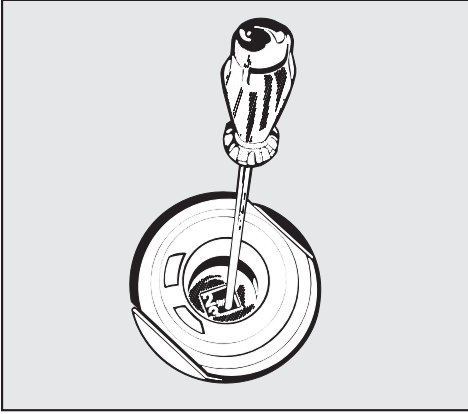


Add **rinsing agent** when the "Add rinsing agent" indicator light  on the control panel comes on.

- Follow the same procedure as for "Adding neutralising agent".

Adding neutralising or rinsing agent

Setting the dosage



The dosage adjuster in both openings has settings from 1-6 (1-6 ml). They are set to "5" (10 ml) at the factory as the recommended dosage for **Neutralising agent**.

The recommended dosage for **rinsing agent** is 2 ml (4 ml altogether).

- Use a higher setting if spots are left after drying.
- If the surface becomes cloudy and streaky, use a lower setting.

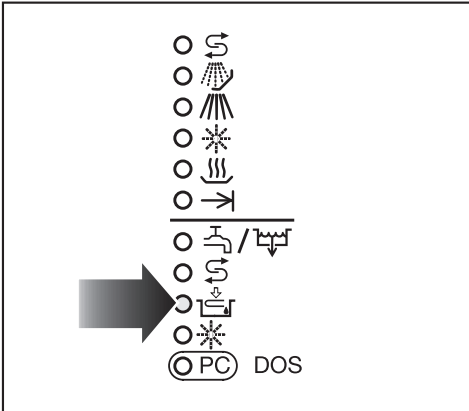
Adding neutralising agent (optional)


As a chargeable optional extra this machine can also be fitted with a “dispenser pump for liquid cleaning agent” (DOS-Module G 10). This is connected externally. The optional DOS Module is supplied with its own installation and connection instructions.

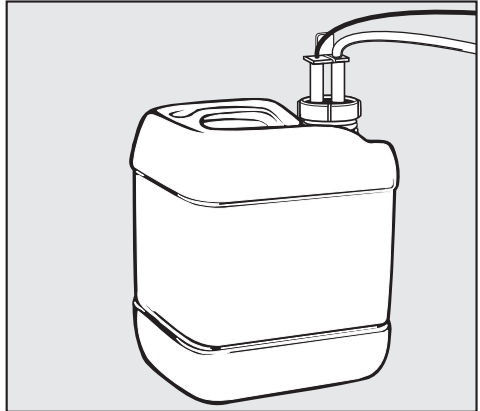
The DOS module has to be connected and the dosage concentration and amount set by a Miele service technician.

The relevant programme (see "Programme Chart" - DOS 3) can not be started until the dispensing system has been vented.

- Place the **red** container with neutralising agent on the floor next to the machine or in an adjoining cupboard.




When the "Add neutralising agent" indicator light  on the control panel lights up:





- Fill the container (red) with neutralising agent, or change it for a new container, and then:
- Insert the siphon tube into the container (observe the colour code).

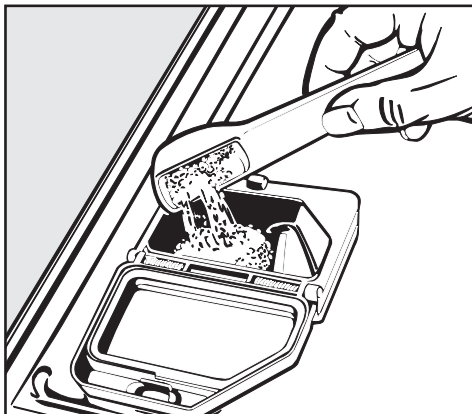
Please remember to fill the container in good time, it should not be allowed to empty completely.

Adding cleaning agent

 Only use cleaning agents suitable for washer disinfectors. Do not use detergents formulated for domestic dishwashers.

Liquid cleaning agents (mildly alkaline) should be dispensed via a DOS module (available as an optional extra - see the Note on the next page).

If liquid cleaning agent is not being used, **powder cleaning agent** must be placed in the detergent dispenser before every programme except with PRE-RINSE  and DRAIN .

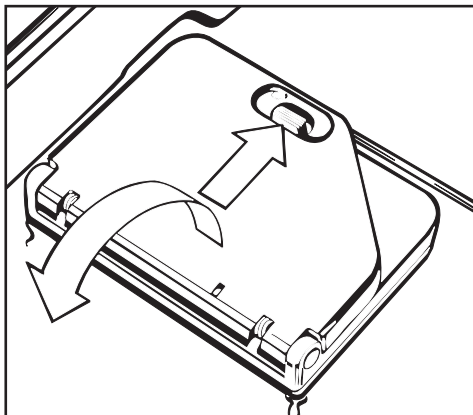


- Add powder cleaning agent to the compartment.

Dosage: Approx. 3 g/l, or 30 g per load. Approx. 10.5 litres of water are used in the wash programme sequence.

Follow detergent manufacturer's instructions if they differ.

- Close the dispenser lid.



- Press the opening catch on the dispenser (see arrow) forwards. The lid will spring open. (The lid is always open at the end of a programme).

Taking the effect on the environment into consideration, please bear the following points in mind when selecting a cleaning agent:

- What level of alkalinity is required to achieve the correct level of cleaning?
- Is active chlorine required for disinfection or oxydation (pigment removal)?
- Are tensides required, in particular for dispersal and emulsification?

Some types of soiling may require different combinations of cleaning agents and other additives. The Miele Professional Department will be pleased to advise you.

As a chargeable optional extra this machine can also be fitted with a DOS-Module G 60 dispenser pump for liquid cleaning agent. This is connected externally.
See "Programming special functions" for venting the dispensing system and setting the dosage.


The optional DOS Module is supplied with its own installation and connection instructions.

Maintenance of the dispensing system

To ensure trouble-free operation the following regular maintenance should be carried out by a Miele approved service technician.

Every 12-18 months:

Replace the dispensing hoses in the DOS modules.

 Take care when handling liquid agents and additives. These may contain irritant or corrosive ingredients.
Follow the manufacturer's safety instructions and relevant Health and Safety procedures carefully.
Wear protective gloves and goggles.

Loading the machine

This washer-disinfector normally requires a top and bottom basket or a mobile (injector) unit.

Various inserts and special baskets are also available for a wide variety of instruments and utensils.

The diversity of inserts and baskets means that it is not possible to illustrate them all or give detailed instructions on their use here. For instance there are inserts for direct injection of narrow necked flasks, butyrometers, pipettes etc.


Standard laboratory glassware such as beakers, Erlenmeyer flasks, Petri dishes, test tubes etc. can be placed in a variety of full, half and quarter inserts in the upper or lower basket.

The following instructions relate only to basic preparation and loading of glassware and utensils.

Loading the machine

Preparation

- Empty all glassware and utensils before loading into the machine (paying particular attention to regulations regarding epidemics).

 Ensure that no acid or solvent residues, especially hydrochloric acid or chlorides get into the wash cabinet.

- Remove all agar residues from Petri dishes.
- Remove blood clots and residues from test tubes, etc.
- Remove all stoppers, corks, labels, sealing wax residues, etc.

Note

- Load items so that water will come into contact with all surfaces. This ensures that they will be properly cleaned.
- Do not place items to be cleaned inside other pieces where they may be concealed.
- Hollow vessels should be inverted and placed in the correct inserts. The water must be able to access them unhindered.
A cover net can be used to reduce the risk of movement during the wash process and prevent glass breakages.
- Petri dishes and similar should be placed in the correct insert with the soiled side facing the centre.
- Pipettes should be placed with the mouthpiece facing upwards.
- Deep sided items should be placed at an angle **so that water can run off them unhindered**.
- Tall, narrow pieces should be placed in the centre of the baskets This ensures good coverage of water.
- Mobile units with adapters must engage correctly (see next page).
- The spray arms must not be blocked by items which are too tall or which hang down in their path. If necessary, manually rotate the arms to test.

Important:

Make sure that the water connection spring adapter engages correctly when a basket or injector unit is inserted in the machine. It must be 4-5 mm higher than the water connection inlet in the machine. If it is not:

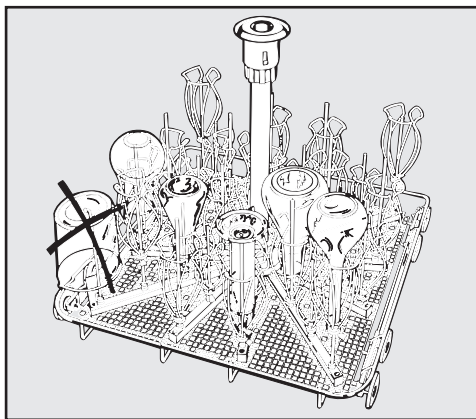
- Loosen the lock ring.
- Push up the adapter (4-5 mm higher than the water connection inlet in the machine) and tighten up the lock ring.

Select baskets and inserts which are appropriate for the application.

See examples on the following pages

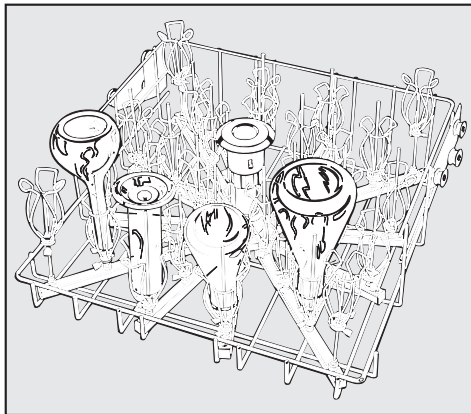
Loading the machine

Loading examples:



E 350 Mobile unit "Intermiel"

For narrow necked glassware, complete with 15 jets 4x1 mm/160 mm high, 18 jets 6x1 mm/220 mm high and 33 MIELAVA clips.

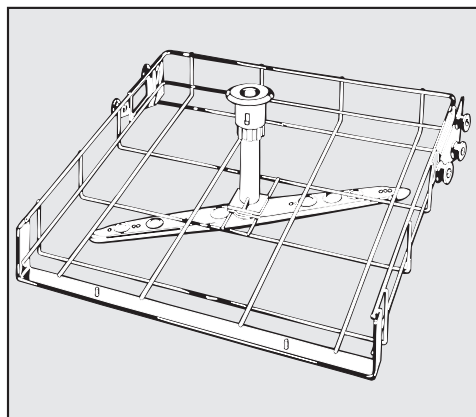


O 187 Mobile unit

(Upper basket) for direct injection of narrow necked glassware, 34 jets 4x1 mm/ 160 mm with MIELAVA clips.

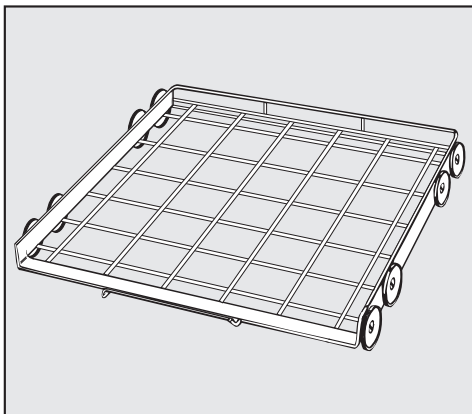
Note:

When using O 187 with **powder cleaning agent** this must be placed on the inside of the door only (this applies to programmes **without** a pre-wash). Otherwise use a **liquid cleaning agent**.



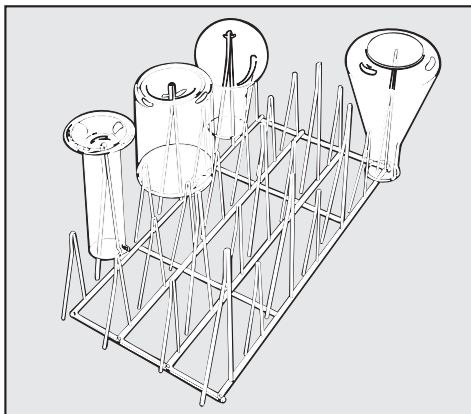
O 188 Upper basket/carrier (empty)

For various inserts



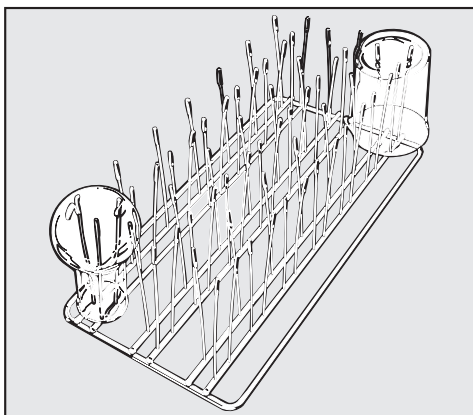
U 874 Bottom basket/carrier (empty)

For various inserts



E 106

Stainless steel half insert with 28 spring clips in 2 different heights to accommodate a variety of laboratory glassware such as narrow necked flasks, measuring cylinders, medicine bottles etc.



E 109

Stainless steel half insert for 21 beakers up to 250 cm³, Erlenmeyer flasks, conical flasks etc.

Loading the machine

Adjusting the top basket

The top basket can be adjusted above and below the middle position by 2 cm.

Depending on the position of the top basket, the baskets can accommodate vessels and instruments of the following heights:

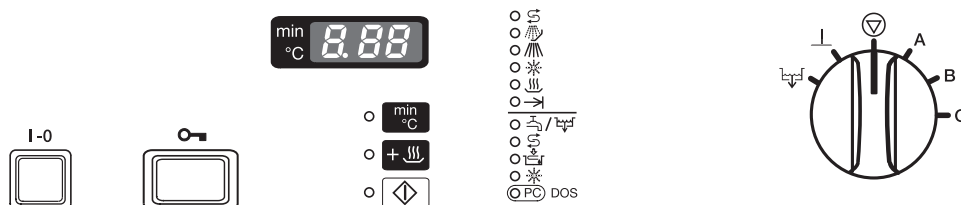
Example: Top basket O 188/1 and bottom basket U 874

Top basket position	Top basket height (cm)	Bottom basket height (cm)
Top	max. 15.5 *)	max. 28.5 *)
Middle	max. 17.5 *)	max. 26.5 *)
Bottom	max. 19.5 *)	max. 24.5 *)

*) without inserts

To adjust the top basket:

- Pull out the top basket until a resistance is felt, lift from the runners and remove.
- Unscrew the knurled nuts (roller bearings) on both sides of the basket with a suitable spanner, reposition as required.



Switching on

- Close the door.
- Open the stopcocks (if turned off).
- Press the **I-0** button.

When the programme selector is at the STOP position (V) a point lights up in the display.

Starting a programme

Choose your programme according to the type of instruments or utensils being cleaned, and the degree of soiling.

The different programmes and their uses are described in the **Programme Chart** at the end of this booklet.



- Turn the programme selector clockwise or anti-clockwise to the required programme.
The temperature of the first rinse of the programme selected is shown in the display, except with PRE-RINSE (L) and DRAIN (W).
The indicator light next to the Start button (◇) flashes.

- Select additional function DRYING (+ W) if required (see "Selecting an additional function").
 - Press the Start button (◇). The actual temperature will appear in the display.
The indicator light next to the Start button lights up constantly.
- Once the programme has started all other programmes are blocked. If the programme selector is then turned to another programme, the values shown in the display go out. The values can be seen again if the programme selector is turned back to the position of the programme currently in operation.
- To alternate between elapsed time and actual time in the display during the programme, press the min °C button.

Operation




Changing a programme

Provided the Start button has not yet been pressed, a wrongly selected programme may be changed as described below (if it has been pressed, see "Cancelling a programme"):

- Turn the programme selector to the required programme.
- Select additional function DRYING  again if required (see "Selecting an additional function").
- Press the Start button .







Selecting an additional function

The following additional function can be selected:



-  DRYING
Drying may be selected as an additional function as soon as the programme has been selected (except with PRE-RINSE  and DRAIN ). Drying is phased over 10 minutes. The total running time of the programme lengthens accordingly.


Programme sequence display

The indicator light for the **active** programme stage lights up during the programme.

	Reactivation
	Pre-wash
	Main wash
	Interim rinse / Final rinse
	Drying (additional function)
	End of programme (Programme parameters have been reached)

Programme end

The programme has ended when  lights up constantly in the programme sequence display and the Start indicator light  has gone out. A "0" appears in the middle of the display. All the other indicator lights come on and go out in sequence. At the same time a buzzer sounds for a maximum of 30 seconds (standard setting). The buzzer can be changed (see "Programming special functions").

Use the  button to see the total running time of a programme or the actual temperature.

Switching off



- Press and release the **I-0** button.


Note:


As the machine is fitted with an electric door lock, the door can only be opened if the **I-0** button is pressed in (see "Opening and closing the door").

To cancel a programme

Once a programme is running it should only be cancelled in extreme cases, e.g. when articles in the machine rattle or bump against each other and have to be rearranged.

- Turn the programme selector to the  position (the programme is cancelled after approx. 2 secs.).
- Open the door .


 Caution. Water and items in the machine may be hot. Danger of burning or scalding.

- Arrange the load securely, (wear protective gloves where necessary, and observe appropriate health and safety regulations relating to infectious diseases).
- Replenish powder detergent if necessary.
- Close the door.
- Select the DRAIN programme , (wash liquor is pumped away).
- Select and start the programme again.


Programming special functions

For future servicing work, please document any alterations to the standard factory settings.
Enter any alterations in the field
Value set:_____.










General notes:

- Switch positions that have not been allocated a function are indicated in the middle part of the display by a bar (-).
- The programming level is called up via the STOP position .

1. Rinse 2

A second interim rinse can be programmed in to improve interim rinsing in all programmes except for PRE-RINSE .

To use AD water in the programme section "Rinse 2" the machine has to be programmed by a Miele service technician.

- Turn the programme selector to the STOP position .
- Switch off the machine.
- Press and hold  and  at the same time, and whilst doing so switch the machine on with **I-0** button.
The current programme status "P..." will appear in the display and the  /  indicator lights up.
- Press  once, E01 for programming level 1 will appear in the display.
- Turn the programme selector five switch positions clockwise (5 o'clock position).
The number 50 or 51 will appear in the display.
"50" = **without** Rinse 2.
"51" = **with** Rinse 2.
- Press  to change from "50" to "51" or vice versa.
- Press the  button. SP appears.
- Press  again. The change has been recorded.




Value set:_____



2. Altering the temperature and/or the temperature holding time in the “Main wash” and “Final rinse” programme stages

Please make a note of any changes to the temperature and / or the temperature holding time in the appropriate section of the **programme chart**.



The programme chart shows the factory settings for the **Main wash temperature** together with temperature holding time and the **Final rinse temperature** with its temperature holding time.

The special functions can be used to alter the temperatures of the main wash and of the final rinse from 30 °C -70 °C and the temperature holding time from 1-10 minutes.




- Turn the programme selector to the STOP position  (the programming level is displayed only in this switch position).
- Switch off the machine.
- Press and hold  and  at the same time, and whilst doing so switch the machine on with **I-O** button.

The current programme status “P...” will appear in the display and the  /  indicator lights up.

"Main wash" temperature:




- Press  three times, E03 for programming level 3 will appear in the display.
- Turn the programme selector to the programme which needs to be changed. The actual value appears in the display after **°C**.
- Press  or hold it in, until the required value appears in the display.

"Main wash" temperature holding time:




- Turn the programme selector to the STOP position  (the programming level is only displayed in this switch position).
- Press  again, E04 for programming level 4 will appear in the display. Then:
- Turn the programme selector back to the programme which needs to be changed. The actual value appears in the display after **min**.
- Press  until the required value appears in the display.

Programming special functions



"Final rinse" temperature:

- Turn the programme selector to the STOP position  (the programming level is only displayed in this switch position).
- Press  again, E05 for programming level 5 will appear in the display. Then:
- Turn the programme selector back to the programme which needs to be changed. The actual value appears in the display after **°C**.
- Press  or hold it in, until the required value appears in the display.

"Final rinse" temperature holding time:

- Turn the programme selector to the STOP position  (the programming level is only displayed in this switch position).
- Press  again, E06 for programming level 6 will appear in the display. Then:
- Turn the programme selector back to the programme which needs to be changed. The actual value appears in the display after **min**.
- Press  until the required value appears in the display.

Having changed a value or all values:

- Press the  button. SP appears.
- Press  again. The change has been recorded.

3. Venting and setting the dosage on "DOS modules G 60 and C 60" (optional extra)

- Set the dosage selector on the DOS-Module to position 10 (**applies to DOS Module C 60 only**).
- Turn the programme selector to the STOP position (⏏).
- Switch off the machine.
- Press **min** and **⏏** at the same time, hold them in and, whilst doing so, switch the machine on with the **I-0** button.
The current programme status "P..." will show in the display.
The indicator light **⚡** / **⏏** will come on.
- Press **+u** twice, E02 for programming level 2 will appear in the display.

Venting the dispensing system:

- Turn the programme selector to the **A** position. "do1" appears in the display.
- Press **min**.
The dispensing system will be vented automatically. Venting takes 90 seconds and when completed, a "0" appears in the display.

If only **venting** is required:

- Switch the machine off with the **I-0** button.
- **Immediately after this** start the PRE-RINSE **⏏** programme, so that after venting any agents in the wash cabinet are diluted before being drained away.

Setting the dosage:

Set the amount to dispense according to the detergent manufacturer's recommendations.

The machine needs 9.5 litres of water in the main wash stage of the programme.

Example:

A manufacturer recommends 4 ml cleaning agent per litre of water:

$$9.5 \text{ l} \times 4 \text{ ml/l} = 38 \text{ ml.}$$

2 ml **△** 1 second dispensing time; i.e. programming to 19 seconds.

- Turn the programme selector to the **B** position, the dispensing time in seconds appears in the display, e.g "10".
- Press **min** repeatedly or hold it in, until the number "19" appears in the display (dispensing time 19 seconds **△** 38 ml - see example -).
The dispensing time/amount is set.

Having changed a value or all values:

- Press the **⏏** button. SP appears.
- Press **⏏** again. The change has been recorded.

Value set: _____

If the dispensing system also needs to be **vented**:

- Start the PRE-RINSE programme **⏏**, so that after venting any agents in the wash cabinet are diluted before being drained away.






Programming special functions




4. Delay start and setting the delay start time

The start of a wash programme can be delayed by up to 24 hours in 30 minute stages.

If you set a very long delay start period there is a danger of items in the machine drying out and this can impair cleaning results.

a) To activate Delay Start


- Turn the programme selector to the STOP position (0).
- Switch off the machine.
- Press and hold  and  at the same time, and whilst doing so switch the machine on with **I-O** button.
The current programme status "P..." appears in the display and the  /  indicator lights up.
- Press  once, E01 for programming level 1 will appear in the display.
- Turn the programme selector eight switch positions clockwise (8 o'clock position).
The number 80 or 81 will appear in the display.
"80" = **without** Delay start.
"81" = **with** Delay start.


- Press  to change from "80" to "81" or vice versa.
- Press the  button. SP appears.
- Press  again. The change has been recorded.

Value set::_____

b) Setting the delay start period







The delay start period (from 30 minutes to 24 hours) must be set **before** a programme is started.




- After selecting a programme (see "Switching on") Press the  button or hold it in until the required value is displayed. The "Delay Start" indicator light comes on.

After the "Start" button  is pressed the delay start period will count down in the display until the programme automatically starts.

5. Audible tone (Buzzer)

This special function allows you to programme a buzzer (lasting up to a maximum of 30 seconds) for the following functions:


- Programme end = Constant buzzer
- Fault warning = Buzzer at one second intervals
- Turn the programme selector to the STOP position .
- Switch off the machine.
- Press and hold  and  at the same time, and whilst doing so switch the machine on with **I-O** button.
The current programme status "P..." appears in the display and the  /  indicator lights up.
- Press  once, E01 for programming level 1 will appear in the display.
- Turn the programme selector ten switch positions clockwise (10 o'clock position).
A number from 100 to 103 will appear in the display.
"100" = buzzer switched off.
"101" = buzzer at end of programme (standard setting)
"102" = Fault indication
"103" = buzzer for all functions (at end of programme and for faults).

- Press  or hold pressed in, until the required value appears in the display.
- Press the  button. SP appears.
- Press  again. The change has been recorded.

Value set: _____









Note:

The buzzer can be switched off early by

- turning the programme selector to the STOP position ,
- interrupting the power supply (e.g. by opening and closing the door).

Programming special functions

6. Re-setting all parameter changes back to the factory settings.


- Turn the programme selector to the STOP position (▽).
- Switch off the machine.
- Press and hold  and  at the same time, and whilst doing so switch the machine on with **I-O** button.
The current programme status “P...” will appear in the display and the  /  indicator lights up.
- Press  seven times, E07 for programming level 7 will appear in the display.
- Turn the programme selector to any switch position (except STOP).
00 or PP will appear in the display.
00 = factory setting
(Electronics have not been re-programmed).
PP = Electronics have been re-programmed.
- If “PP” is displayed press  to change from “PP” to “00”.
- Press the  button. SP appears.
- Press  again. All values which had been changed have now been now reset to the factory settings.

If the hardness level setting in the water softener had been changed this will reset to the factory setting of 340 mg/l (19 °d). This will need to be reset to suit the hardness level in your area.

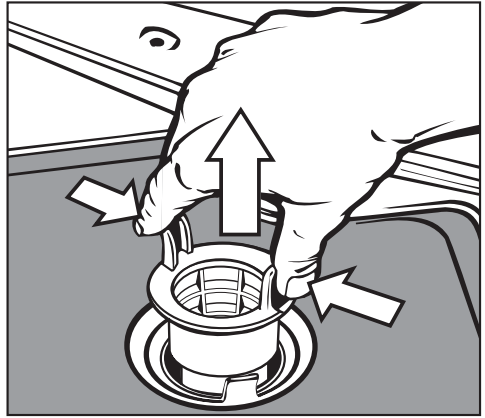
Cleaning the filters in the wash cabinet

 This machine must not be used without all the filters in place.

The filter combination in the base of the wash cabinet should be inspected regularly and cleaned if necessary.

 **Caution**
Watch out for glass splinters which could cause injury.

Cleaning the coarse filter

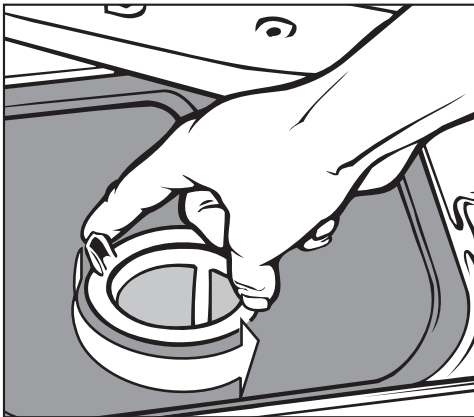


- Press the two lugs together, remove and clean the coarse filter.
- Put the clean filter back in position and press until it clicks in place.

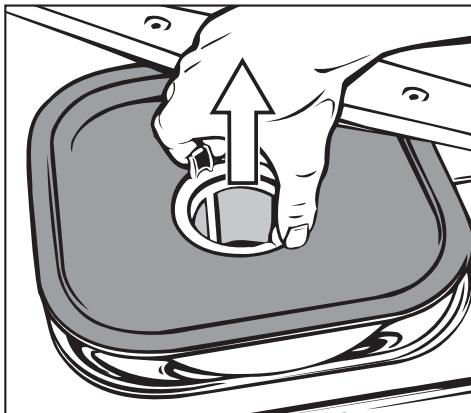
Cleaning and care

Cleaning the fine, flat and micro-fine filters

- Remove the coarse filter.



- Remove the fine filter (if fitted) from between the flat and the micro-fine filters.
- To unscrew the micro-fine filter, take hold of the two lugs and turn twice in an anti-clockwise direction.



- Then remove together with the flat filter.
- Clean the filters.
- Replace the filter combination by carrying out the above steps in the reverse order. Ensure that the flat filter sits flat in the base of the wash cabinet.

Cleaning the spray arms

Waste particles can lodge in the spray arm jets.

It is therefore important to inspect the spray arms regularly.

- Use a sharp pointed object to push particles into the spray arm jets and rinse well under running water.

Remove the spray arms as follows:

- Unscrew the **upper** spray arm.
- Remove the **middle** spray arm by unscrewing the **nut** which secures it to the upper basket.

Important: The nut has a left hand thread and has to be turned clockwise to unscrew it.

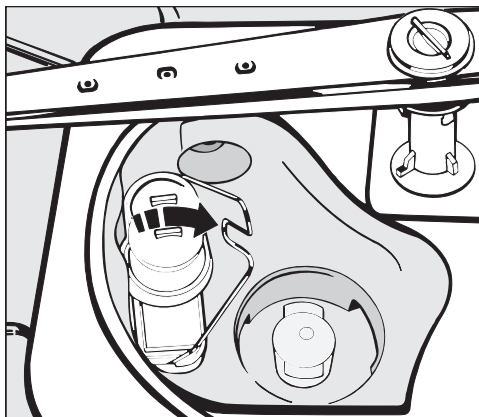
- Loosen the knurled thumb nut to unscrew the **lower** spray arm. You will first need to take the bottom basket out of the machine.
- After replacing the spray arms, check that they rotate freely.

Cleaning and care

Cleaning the drain pump and non-return valve

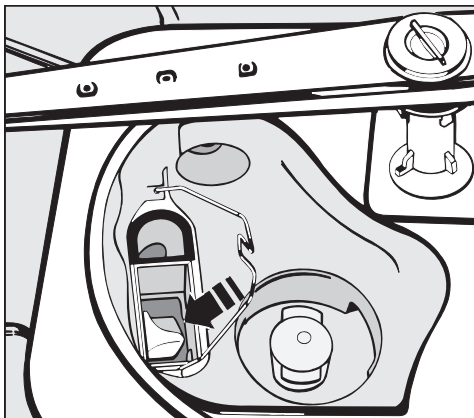
If water has not been pumped away at the end of a programme the drain pump or the non-return valve might be blocked. They are however, easy to clean.

- Take the filter combination out of the wash cabinet.



- Release the locking clamp.
- Lift up the non-return valve and rinse under running water.

The drain pump is situated under the non-return valve (see arrow).




- Before replacing the non-return valve check that the drain pump is free of obstructions.
- Carefully replace the non-return valve and secure with the locking clamp.

For safety reasons you should clean the load again.

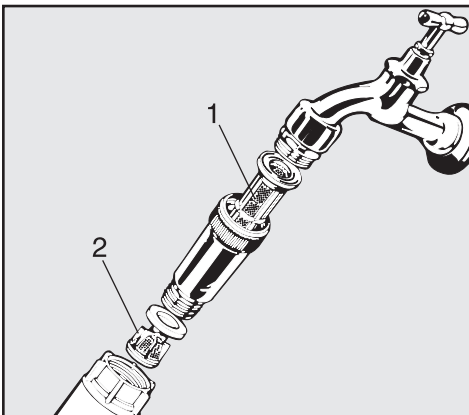
Cleaning the filters in the water inlet

Filters are incorporated in the screw connection of the water inlet hose to protect the water inlet valve. If these filters get dirty they need to be cleaned, otherwise insufficient water flows into the wash cabinet.

 The plastic housing of the water connection contains an electrical component. It must not be dipped in water.

To clean the filters

- Disconnect the machine from the mains supply (switch off at the mains and pull out the plug, switch off the appropriate circuit in the fuse box or withdraw the mains fuse).
- Turn off the stopcock and unscrew the water inlet hose.




- Clean the large area filter (1) and fine filter (2), and replace with new filters if necessary.

- Replace filters and the seal. Make sure they are sitting correctly.
- Reconnect the hose to the water inlet, making sure that it goes back on straight.
- Open the stopcock carefully. If there is a leak, screw the connections on more tightly.


Cleaning the control panel

- This should only be cleaned with a damp cloth or a suitable cleaner for use on plastic materials, or with a disinfectant tested and recognised as suitable for this use.

 Do not use abrasive cleaners, glass cleaners or all-purpose cleaners. Because of their chemical composition they could cause serious damage to plastic components.

Cleaning the front of the machine

- Clean using a proprietary cleaning agent designed for the type of front the machine is fitted with.

 Do not use cleaning agents containing ammonia or thinners.

Correcting minor faults

With the aid of the following explanatory notes, minor faults can be corrected without contacting the Miele Service Dept.


Any work on the electrical components of the machine should only be carried out by a suitably qualified and competent person in accordance with local and national safety regulations. Unauthorised repairs could be dangerous.

Faults / possible causes


The machine does not start

- The door is not properly closed.
- The plug is not properly inserted in the socket.
- The fuse is defective / has blown.

A few minutes after switching on, the / indicator light flashes (fault code F..E appears in the display)

- The stopcocks are closed.
- The filters in the water inlet hose are dirty.
- The water pressure is too low.
- Turn the programme selector to the STOP position  (the fault code goes out).
- Switch the machine off (press **I-0**).
- Open the stopcocks or clean the filters (see "Cleaning and Care").
- Switch the machine on again and reselect the programme.

The wash cycle finishes too early and the / indicator light flashes (fault code F A appears in the display).

- The drain hose is kinked.
- The drain pump is blocked
- Turn the programme selector to the STOP position  (the fault code goes out).
- Switch the machine off (press **I-0**).
- Straighten the hose and check/clean the drain pump.
- Switch the machine on again, drain the water away and start the programme again (see DRAIN and "Switching on").

Water in the wash cabinet does not heat up; the programme takes too long (a fault code appears in the display: F01 - F02)


This machine has a resettable heater limiter which will switch off the heaters if they over-heat. This could be caused for example, by large articles covering the heating elements or if the filters in the wash cabinet are blocked.

- Remove the cause of the fault.
- Take off the service panel (see "Electrical connection").
- Press the reset button on the heater limiter (reddish brown) located on the left- hand side of the plinth.

If this switch trips again contact the Miele Service Department.

After Sales Service

When a fault first occurs, please check that the fault has not been caused by incorrect operation. This will help avoid an unnecessary service call-out. To do this:

- Turn the programme selector to the STOP position  (the fault code goes out).
- Switch the machine off (press **I-0**).
- Switch the machine on again and reselect the programme.

If you still have difficulties or if a fault code "F..." appears in the display, please contact your authorised Service Dealer or the Miele Service Department. See back cover for addresses. Please quote the fault code as well as the model type and number of your machine which is given on the data plate inside the door (see also "Electrical connection").

Installation

Please refer to the installation diagram supplied with the machine.

⚠ Furniture and fittings installed near the machine must be of a commercial standard able to withstand the effects of steam and condensed water.

The machine must be installed correctly and levelled.

Any unevenness in the floor level can be compensated for and the height of the machine raised or lowered by adjusting the four screw feet.

The machine can be installed in the following ways:

- **Free-standing.**
- **Slot-in or at the end of a row:**

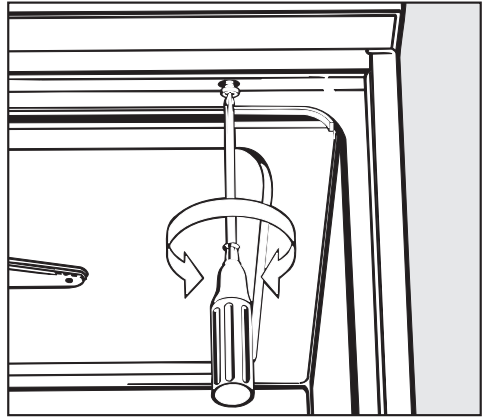
The machine can be installed next to other machines or furniture or in a suitable niche. The niche must be at least 60 cm wide and 60 cm deep.

- **Built-under:**

The machine can be installed under a continuous worktop or sink drainer. The recess must be at least 60 cm wide, 60 cm deep and 82 cm high.

If necessary, the machine lid can be removed as follows:

- Open the door.



- Remove the fixing screws on the left and right hand sides using a screwdriver.
- Pull the machine lid approx. 5 mm forwards, lift it upwards and remove it.

Important for machines fitted with a steam condenser (depending on model):

To prevent damage by steam to the worktop, the self adhesive protective foil supplied (25 x 58 cm) must be stuck in place underneath the worktop near the steam condenser.

Position and secure the machine

To ensure stability the machine must first be aligned and then screwed to the worktop.

- Open the door. Secure the machine to the front edge of the worktop using screws through the holes on the left and right hand sides of the front trim.
- Do not use silicone sealant to seal the gaps between the machine and any neighbouring units as this would hinder ventilation to the circulation pump.

Depending on the requirements for building under, the following kit can be ordered from the Miele Spares Dept.:

Cover plate (protects the worktop)

The underside of the worktop is protected against water damage by a stainless steel plate.

Decor frame and decor panel (optional)


If you wish to fit a decor panel to the machine this can only be done by a Miele Service technician. Contact Miele for details.

Decor panel dimensions:

Door panel H x W: 442/586 mm

Service panel H x W: 117/586 mm

Electrical connection

 All electrical work must be carried out by a suitably qualified and competent person in accordance with local and national safety regulations (**BS 7671 in the UK**).

- Connection should be made via a suitable isolator, with an on-off switch which should be easily accessible for servicing work.
- For extra safety it is advisable to install a suitable residual current device. Contact a qualified electrician for advice.


WARNING

THIS APPLIANCE MUST BE

EARTHED

- Equipotential bonding should be carried out.

Bonding connection

There is a screw connection point marked with the earth symbol () at the back of the machine, to which the earth lead must be connected.

For technical data see data plate or wiring diagram supplied.


The machine must only be operated with the voltage, frequency and fusing shown on the **data plate**.

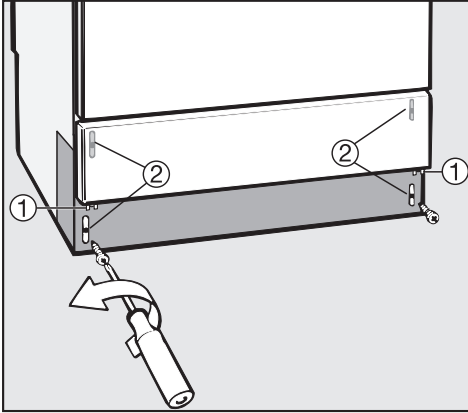
This machine **can be converted** in accordance with the **conversion diagram** and **wiring diagram** supplied.

The **conversion diagram** and **data plate** with test certification (VDE, DVGW etc.) is located on the rear of the machine, and on the plinth (behind the service panel).

- The **wiring diagram** is secured to the inner side of the service panel.

To remove the service panel and plinth:

 Disconnect the machine from the mains electricity supply.



- Remove fixing screws ① from the service panel.
- Take hold of the service panel at both sides and pull upwards.
- Unscrew plinth facing (screws ②).
- Remove the plastic protective cap.


To re-assemble:

- Refit the plastic protective cap, plinth facing and service panel in the reverse order to which they were removed.

See also the installation diagram supplied.



Plumbing

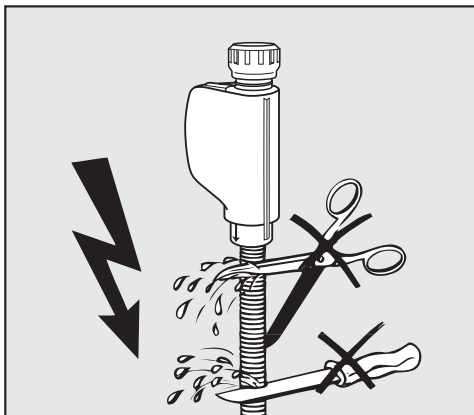
Connection to the water inlet

 Water in the machine is not suitable for drinking.

- The machine must be connected to the water supply in accordance with local and national water authority regulations (WRC in the U.K.).
- If the iron content in the water is too high, there is a risk of corrosion damage to instruments.
If the chloride content in the water exceeds 100 mg/l, the risk of corrosion damage to instruments will increase considerably.
- The machine is constructed to comply with German gas and water regulations (DVGW), and may be connected to a suitable water supply without an extra non-return valve if national regulations allow this.

In the UK this machine is listed as a WRAS approved product in the Water Fittings and Materials Directory of products which comply with the Water Fittings Regulations. It is approved for mains water connection in fluid categories 1 to 5 inclusive, when installed using the double check valves supplied.

- The water pressure (flow rate) must be a minimum of 0.5 bar (50 kPa). If the water pressure (flow rate) is below 2 bar (200 kPa) the fill time is automatically extended.
The max. permitted static pressure is 10 bar (1000 kPa).
If the water pressure is not in the range of 0.5 to 10 bar (50-1000 kPa) the  /  indicator light may come on and the fault code "F..E" show in the display. Please contact the Miele Service Department.
- The machine is supplied as standard for connection to a cold **or** a hot water supply up to a max. temperature of 70 °C.
AD-water connection (H₂O pure) see next page.
- Stopcocks with 3/4 BSP male thread are to be provided on site. They should be easily accessible so that the water supply can be turned off when the machine is not in use.
- The DN 10 inlet hose is approx. 1.7 m long terminating in a 3/4 inch female thread. On no account must the inlet filters be removed.
- Large surface area filters are enclosed in the kit supplied with the machine for installing between the stopcock and the inlet hose (see illustration in "Cleaning and Care - Water inlet").
The large surface area filter for AD water is made from chrome nickel steel and can be recognised by the matt top surface.



⚠ The inlet hose must **not** be shortened or damaged in any way (see illustration).

See also the installation diagram supplied.

AD-water connection (pressurised) >50-1000 kPa (0.5-10 bar)

The machine is supplied as standard for connection to a supply system of 0.5 - 10 bar (50 - 1000 kPa). If the water flow pressure is below 2 bar (200 kPa) the fill time is automatically extended.

- The AD pressure tested hose (marked "H₂O pur") with a 3/4" threaded union must be connected to the on-site AD stopcock for purified water.

If the AD water connection is not going to be used, the electronics will need to be reprogrammed by a Miele Service Technician. The inlet hose will remain on the rear of the machine.

AD water connection (non-pressurised) 8.5 - 50 kPa (0.085 - 0.5 bar) - Option -

NOTE:- NON Pressurised is Standard for Models Sold in Australia. Optional connection all other countries.

The appliance **has** to be converted for connection to **8.5 - 50 kPa** if this was not done at the factory (special version). The installation of a feed pump should only be carried out by Miele Service.

When the AD water container is non-pressurised, the tank outlet has to be at least the height of the upper edge of the machine (see installation instructions).

Plumbing

Drainage

- The drainage system is fitted with a non-return valve which prevents dirty water from flowing back into the machine via the drain hose.

- The machine should preferably be connected to a **separate** drainage system on-site.

If separate drainage is not available contact your Miele application specialist for professional advice.

The on-site drain connection point should be sited between 0.3 m and 1 m **above the lower edge of the machine**.

If it is lower than 0.3 m lay the hose in a curve at a height of at least 0.3 m.

The drainage system must be able to take a minimum drainage flow of 16 l/min.

- The drain hose is approx. 1.4 m long, is flexible and has an internal diameter of 22 mm. It must not be shortened.

Hose clips are supplied for securing it in position.




- A longer drain hose (up to 4 m long) is available to order from the Miele Spare Parts Dept.

- The drainage system must not exceed 4 metres.

See also the installation diagram supplied.

Height:	85 (82) cm
Width:	60 cm
Depth:	60 cm
Voltage:	see data plate
Connected load:	see data plate
Fuse rating:	see data plate
Mains connection cable:	approx. 1.8 m
Water pressure (flow rate):	50 - 1000 kPa (0.5 - 10 bar)
Cold or hot water inlet connections:	up to max. 70 °C
AD-water connection	>50 - 1000 kPa (0.5 - 10 bar)
AD-water connection (non-pressurised)	8,5 - 50 kPa (0,085 - 0,5 bar) NOTE:- NON Pressurised is Standard for Models Sold in Australia. Optional connection all other countries.
Delivery head:	min. 0.3 m, max. 1 m
Drainage length:	max. 4 m
Inlet hose	approx. 1.7 m
Drain hose:	approx. 1.4 m
Noise level in dB (A):	
Sound level LpA	Free standing: <70 Built under: <70
Test marks:	VDE, interference suppression, DVGW

Programme chart

Programme	When to use	Cleaning agent (when not using liquid cleaning agent)
		Follow manufacturer's instructions
A SHORT	For laboratory utensils and glassware with light water soluble contamination. This programme does not include a pre-wash or neutralisation. The final rinse is carried out with de-ionised (AD) water.	Approx. 20 grammes in the cleaning agent dispenser, preferably a ph-neutral liquid cleaning agent.
B MEDIUM	For normally soiled laboratory utensils and glassware where the contamination is soluble in water or at higher temperatures where alkaline. This programme does not include a pre-wash. It includes neutralisation and the final rinse is carried out with de-ionised (AD) water.	30 grammes in the cleaning agent dispenser
C LONG	For heavily soiled laboratory utensils and glassware where the contamination is soluble in water or at higher temperatures where alkaline. This programme includes a pre-wash and neutralisation. The final rinse is carried out with de-ionised (AD) water.	30 grammes in the cleaning agent dispenser, and if necessary an additional 10-20 grammes of powder cleaning agent can be placed directly on the inside of the door on the left hand side.
 DRAIN	For draining water out of the machine, e.g. when a programme has been interrupted. Turn the programme selector to the STOP position  first!	
 PRE-RINSE	For rinsing heavily soiled items (e.g. for removing soiling or disinfectant residue or to prevent soiling drying on to dishes when a complete programme does not yet need to be run).	

Programme chart

Programme sequence					
Pre-wash	Main wash 1)	Rinse 1	Rinse 2 2)	Final rinse 1)	Drying (Additional function)
	X DOS 1 70°C/5'		(X) DOS 3 (AD)	X 70°C/3' AD (DOS 2)	(X)
	X DOS 1 70°C/5'	X DOS 3	(X) (AD)	X 70°C/3' AD (DOS 2)	(X)
X	X DOS 1 70°C/5'	X DOS 3	(X) (AD)	X 70°C/3' AD (DOS 2)	(X)
		X			

X = Sections included in a programme (with temperature/temperature holding time)

1) To change a temperature or temperature holding time see "Programming special functions".

2) See "Programme special functions" for instructions on how to activate Rinse 2

(To use AD water in the programme section "Rinse 2" the machine has to be programmed by a Miele service technician).

DOS 1 = For dispensing cleaning agent (see "Adding cleaning agent")

DOS 2 = For dispensing rinsing agent (see "Adding neutralising or rinsing agent")

DOS 3 = For dispensing neutralising agent

AD (Aqua destillata) = Fully demineralised water (VE), pure H₂O, demineralised water, Aqua purificata or distilled water (optional).

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